Frequently Asked Questions:

Sensor Specifications

1) Solid State Hydrogen Sensors for protection of infrastructure

Field-testing of sensor underway at H_2 re-fuelling station. Mixed-potential sensor operated at open circuit mode using Pt and Indium Tin Oxide (ITO) electrodes and a YSZ electrolyte. Responds to H_2 in the 200 ppm to 2%H_2 range with a < 5 sec response time. Sensor element testing times exceed 2 years of operation. Minimum interference from barometric pressure and relative humidity changes.

2) NO_x Sensors for lean burn engine, and stationary reciprocating engine applications

Sensor response demonstrated in Engine dynamometer testing. Mixed potential sensor operated in constant current mode using Pt and Lanthanum Strontium Chromite (LSCO) electrode and YSZ electrolyte. Responds to NO/NO_2 from 5 ppm to 1000 ppm with a response time sufficiently fast to record engine transient combustion events. Calibration curve dependent on ratio of NO/NO_2.

3) Combustion Control Sensors for high sulfur environments

Sulfur resistant oxygen sensor using a mixed-conducting terbium doped YSZ electrode instead of conventional Pt electrodes. Behavior identical to Pt based oxygen sensors with exception sulfur tolerance (stability > 365 days under conditions where Pt electrodes fail in 1-2 weeks). Heavy boiler testing in high concentrations of sulfur completed.

4) CO Sensors for air monitoring and in-flue appliance safety

Sensor response demonstrated under simulated laboratory conditions. Mixed-potential sensor operated in open circuit mode using Pt and Au electrodes and Ceria-based electrolyte. Responds to 5 ppm to 1000 ppm CO with a response time < 5 sec.

5) Non-Methane Hydrocarbon Sensors for automotive OBD-II (On-Board Diagnostics) and air monitoring applications

Sensor response demonstrated in Engine dynamometer testing. Mixed potential sensor operated in open circuit mode using Pt and Lanthanum Strontium Chromite (LSCO) electrode and YSZ electrolyte. Responds to THC content from 5 ppm to 1000 ppm with a response time sufficiently fast to record engine transient combustion events.. Calibration curve dependent on total carbon number of hydrocarbon.